## Abstract

The present invention relates to the field of transfer of small molecules of exogenous nucleic acid into living cells, and to improved methods for accomplishing same using the technique of single-stranded end-capped oligonucleotide gene repair. In some embodiments, the inventive method may be further described as providing incorporation of said materials into cells that can be made to exist in an adherent state in vitro. The invention also relates to the field of microinjecting said materials into living cells with improved cell viability for the injected cells. As well, the invention describes a method for improved genetic modification of endogenous sequences using co-delivery of accessory proteins and oligonucleotides to facilitate modification. The invention further relates to the field of gene therapy, using the technique of single-stranded end-capped oligonucleotide gene repair to correct genetic defects, as well as introducing specific mutations into genomic DNA for use in functional genomics. In some embodiments the invention may be used to introduce specific genetic mutations into selected genes of living cells for the purpose of generating transgenic mice, isogenic cell lines, primary cell types carrying a specific mutation, genetically modified plant cells, validation of gene function, and including, but not limited to, disease gene discovery.